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(54) Liquid cleansing composition.

(57) Aqueous liquid cleansing compositions comprise about 8% to 50% of primary surfactant selected from anionic, cationic, zwitterionic, amphoteric and semi-polar surfactants, from about 0.1% to 6% of C<sub>8</sub>-C<sub>13</sub> alcohol ethoxylate and from about 0.1% to 2% of a water-soluble nonionic polymeric thickening agent, preferably guar gum or derivative thereof. The compositions have desirable foaming, product stability and skin feel characteristics.

LIQUID CLEANSING COMPOSITION

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Technical Field

This invention relates to liquid cleansing compositions and, more specifically, to aqueous liquid cleansing compositions having desirable foaming, product solubility and skin feel characteristics.

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Background

Liquid cleansing products are extensively used as hand cleaners, shampoos, bath foams and for many other purposes. The present invention is concerned primarily with cleansers used for cleaning skin but is not limited to that application. The cleansers of interest are aqueous based and contain a mixture of surfactants.

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In order to achieve controlled use of a liquid cleansing composition, it is desirable to have a somewhat viscous but pourable or pumpable product. A thin, watery product is too easily spilled and wasted when used and does not have good consumer acceptance. A number of high molecular weight polymeric materials have been used in a wide variety of aqueous based products in a thickening, gelling, suspending or protective colloid functionality. Certain nonionic polymers are also known to impart desirable skin feel characteristics to the product, notably guar gum and derivatives thereof (see EP-A-67025). However, cleansing products formulated with the levels of surfactant and polymer necessary to provide satisfactory foaming, thickening and skin feel properties suffer from poor product solubility and viscosity characteristics, especially on storage at low temperatures. Moreover, the solubility and viscosity characteristics are further aggravated by the use of fatty acid alkanolamides which are customarily added to liquid cleansing compositions for suds-boosting purposes. These problems can be mitigated to some extent by adding substantial levels of alcoholic solvents such as ethanol and the like. Nevertheless, the resulting products are not only

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expensive but are technically undesirable because alcoholic solvents are believed to have a tendency to cause drying of the skin.

It has now been discovered that liquid cleansing products having desirable foaming, thickening and skin feel properties together with excellent formulation solubility and viscosity characteristics at both normal and low storage temperatures are provided by the use of polymeric thickening materials together with a mixed surfactant system comprising additive levels of specified nonionic ethoxylated aliphatic alcohols.

#### Summary of the Invention

According to the present invention, therefore, there is provided an aqueous liquid cleansing composition comprising:

- (a) from about 8% to about 50% of primary surfactant selected from anionic, cationic, zwitterionic, amphoteric and semi-polar surfactants and mixtures thereof,
- (b) from about 0.1% to about 6% of auxiliary surfactant selected from ethoxylated aliphatic alcohols having an average alkyl chain length of from 6 to 13 carbon atoms,
- (c) from about 0.1% to about 2% of a water-soluble polymeric thickening agent.

The water-soluble thickening agent useful in the present compositions is preferably a substantially nonionic water-soluble polymer selected from guar gum, hydroxypropyl guar gum, methyl cellulose, methyl hydroxypropyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, locust bean gum, starch, starch amylose, hydroxyethylamylose and polyoxyethylene. The polymer is a high molecular weight material (mass-average molecular weight being generally from about 50,000 to about 5,000,000, preferably from about 100,000 to about 1,000,000), and its thickening ability is preferably such that a 1% dispersion of the polymer in water at 20°C exceeds about 20 Pa.s (200 poise) at a shear rate of  $10^{-2} \text{ sec}^{-1}$ .

Highly preferred polymers herein are guar gum and derivatives thereof which provide a highly desirable smooth slippery skin feel to the products. Guar gum is a naturally occurring material which is the principal component of the seed of the guar plant. Guar gum is extracted from the guar seed and purified. Guar gum is a high molecular weight carbohydrate polymer or polysaccharide made up of mannose and galactose units linked together. The guar molecule is essentially a straight chain of mannose units linked to each other by means of beta (1-4) glycosidic linkages. Galactose units branch from alternate mannose units through alpha (1-6) linkages with the mannose units.

The desired skin feel of the liquid cleansing products is preferably obtained by using hydroxypropyl guar gum. In the guar gum molecule, each mannose and galactose unit has from 2-4 hydroxyl groups, depending on where the units are located in the polymer chain. Guar gum derivatives are produced by reacting guar gum such that substitution of chemical moieties occurs on some of these hydroxyl groups. Hydroxypropyl guar gums are a family of materials with hydroxypropyl groups substituted for some of the hydroxyl groups. The term "degree of substitution" is used to indicate the average number of hydroxypropyl groups which occur on each of the sugar units in the polymer molecule. The preferred hydroxypropyl guar gum used in the present invention has a degree of substitution of from about 0.3 to 1.2; especially preferred is hydroxypropyl guar gum with a degree of substitution of about 0.6. Such a material is available commercially as Jaguar HP-60 from Meyhall Chemical Ltd.

Cationic polymers suitable for use herein include cationic guar gums such as hydroxypropyltrimethylammonium guar gum (d.s. of from 0.11 to 0.22) available commercially under the trade names Jaguar C-14-S(RTM) and Jaguar C-17(RTM), and also Jaguar C-16(RTM), which contains hydroxypropyl substituents (d.s. of from 0.8-1.1) in addition to the above-specified cationic groups. Other

suitable cationic polymers are copolymers of dimethyl aminoethylmethacrylate and acrylamide and copolymers of dimethyldiallylammonium chloride and acrylamide.

5 The quantity of polymer material used in the liquid cleansing products of this invention is from about 0.1% to about 2%, especially from about 0.2% to about 1%. A preferred range of usage for guar gum and its derivatives is from about 0.3% to about 0.7%.

10 The liquid cleansing compositions of this invention comprise a primary surfactant selected from anionic, cationic, zwitterionic and amphoteric surfactants and mixtures thereof, together with an auxiliary surfactant which is a specific type of nonionic surfactant material. The primary surfactant comprises from about 8% to about 50%,  
15 preferably from about 10% to about 30%, more preferably from about 15% to about 25% by weight of the composition; the auxiliary surfactant comprises from about 0.1% to about 6%, preferably from about 0.5% to about 4%, more preferably from about 1% to about 3% by weight of the composition.

20 Suitable anionic surfactants are water-soluble salts of  $C_8$ - $C_{22}$  alkyl benzene sulphonates,  $C_8$ - $C_{22}$  alkyl sulphates,  $C_{10-18}$  alkyl polyethoxy ether sulphates,  $C_{8-24}$  paraffin sulphonates,  $\alpha$ - $C_{12-24}$  olefin sulphonates,  $\alpha$ -sulphonated  $C_6$ - $C_{20}$  fatty acids and  
25 their esters,  $C_{10-18}$  alkyl glyceryl ether sulphonates, fatty acid monoglyceride sulphates and sulphonates, especially those prepared from coconut oil,  $C_8$ - $C_{12}$  alkyl phenol polyethoxy ether sulphates, 2-acyloxy  $C_9$ - $C_{23}$  alkane-1-sulphonate, and beta-alkyloxy  $C_8$ - $C_{20}$  alkane  
30 sulphonates.

Preferably, the anionic surfactant is selected from alkali metal, alkaline earth metal, ammonium, and alkanolammonium salts of alkyl sulphates, alkyl ethoxy sulphates, alkyl benzene sulphonates and mixtures thereof.

35 The alkyl sulphate component is preferably a primary alkyl sulphate in which the alkyl group contains about 10-16 carbon atoms, more preferably an average of 12-14 carbon

atoms. The alkyl group may be linear or branched in configuration.  $C_{10}$ - $C_{16}$  alcohols, derived from natural fats or Ziegler olefin build-up or OXO synthesis, form suitable sources for the alkyl group. Examples of

5 synthetically derived materials include Dobanol 23 (RTM) sold by Shell Chemicals (UK) Ltd, Ethyl 24 sold by the Ethyl Corporation, a blend of  $C_{13}$ - $C_{15}$  alcohols in the ratio 67%  $C_{13}$ , 33%  $C_{15}$  sold under the trade name Lutensol by BASF GmbH and Synperonic (RTM) by ICI Ltd, and Lial 125 sold

10 by Liquichimica Italiana. Examples of naturally occurring materials from which the alcohols can be derived are coconut oil and palm kernel oil and the corresponding fatty acids.

The level of the alkyl sulphate component generally lies in the range of from about 4% to about 20% by weight of

15 the composition, more generally from about 4% to about 16% by weight. In one preferred compositional aspect of the invention in which alkyl benzene sulphonate is also incorporated, the usage level lies in the range from about 8% to about 12% by weight, most preferably in the range from

20 about 8% to about 11% by weight. In another compositional aspect of the invention in which a sulphonate component is not present, the alkyl sulphate level lies in the range from about 12% to about 20%, more preferably from about 14% to about 18% by weight.

25 For the purposes of the present invention any alkali metal, alkaline earth metal, ammonium or substituted ammonium cation can be used in association with the alkyl sulphate. In particular, the alkyl sulphate can be associated with a source of magnesium ions either introduced

30 as the oxide or hydroxide to neutralise the acid, or added to the composition as a water soluble salt. In practice the magnesium ion will be present at a level of from about 0.001% to about 0.70% by weight, preferably from 0.01% to 0.1% by weight of the composition.

35 Alkyl benzene sulphonates preferred for use in compositions of the present invention are those in which the alkyl group, which is substantially linear, contains about

10-16 carbon atoms, preferably about 11-13 carbon atoms, a material with an average chain length of 11.8 being most preferred. An alkylbenzene sulphonate content of from about 10% to about 28% by weight of the composition is generally  
5 suitable. In a preferred aspect of the invention an alkylbenzene sulphonate content of from 13% to 17% by weight is used.

The alkyl ethoxy sulphate surfactant component preferably comprises a primary alkyl ethoxy sulphate derived  
10 from the condensation product of a  $C_{10}$ - $C_{16}$  alcohol with an average of up to 6 ethylene oxide groups. The  $C_{10}$ - $C_{16}$  alcohol itself can be obtained from any of the sources previously described for the alkyl sulphate component. It has, however, been found preferable to use  
15 alkyl sulphate and alkyl ether sulphate in which the carbon chain length distributions are the same.  $C_{12}$ - $C_{13}$  alkyl ether sulphates are preferred and the level of alkyl ethoxy sulphate in the composition lies generally between about 8% and about 25% by weight of the compositions. In  
20 compositions additionally incorporating an alkyl benzene sulphonate surfactant, the level of alkyl ethoxy sulphate generally lies in the range from 9% to 15% by weight.

Conventional ethoxylation processes result in a distribution of individual ethoxylates ranging from 1 to  
25 about 10 ethoxy groups per mole of alcohol, so that the desired average can be obtained in a variety of ways. Blends can be made of material having different degrees of ethoxylation and/or different ethoxylate distributions arising from the specific ethoxylation techniques employed  
30 and subsequent processing steps such as distillation. For example, it has been found that approximately equivalent sudsing to that given by a blend of alkyl sulfate and alkyl triethoxy ether sulfate can be obtained by reducing the level of alkyl sulfate and using an alkyl ether sulfate with  
35 an average of approximately two ethoxy groups per mole of alcohol. In preferred compositions in accordance with the

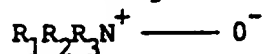
present invention the average degree of ethoxylation is from about 0.5 to about 4, more preferably from about 0.8 to about 2.0.

Cationic detergents include those having the formula  
5  $R - N(R^2)_3^{(+)} X^{(-)}$  wherein R is an alkyl chain containing from about 8 to about 20 carbon atoms, each  $R^2$  is selected from alkyl and alkanol groups containing from 1 to 4 carbon atoms and benzyl groups, there being normally no more than one benzyl group and two  $R^2$  groups can be joined  
10 by either a carbon-carbon ether, or imino linkage to form a ring structure, and X represents a halogen atom, sulfate group, nitrate group or other pseudohalogen group. Specific examples are coconut alkyl trimethyl ammonium chloride, dodecyl dimethyl benzyl bromide and dodecyl methyl morpholino  
15 chloride.

Zwitterionic synthetic detergents can be broadly described as derivatives of aliphatic quaternary ammonium, phosphonium, and sulfonium compounds, in which the aliphatic radical may be straight chain or branched, and wherein one  
20 of the aliphatic substituents contains from about 8 to 18 carbon atoms and one contains an anionic water solubilizing group, e.g., carboxy, sulfo, sulfato, phosphato, or phosphono. Examples of compounds falling within this definition are 3-(N,N-dimethyl-N-hexadecylammonio)  
25 propane-1-sulfonate and 3-(N,N-dimethyl-N-hexadecylammonio)-2-hydroxy propane-1-sulfonate.

Amphoteric synthetic detergents can be broadly described as derivatives of aliphatic secondary and tertiary  
30 amines, in which the aliphatic radical may be straight chain or branched and wherein one of the aliphatic substituents contains from about 8 to 18 carbon atoms and one contains an anionic water solubilizing group, e.g., carboxy, sulfo, sulfato, phosphato, or phosphono. Examples of compounds  
35 falling within this definition are sodium-3-dodecylaminopropionate and sodium-3-dodecylaminopropane sulfonate.

Other suitable primary surfactants herein are the long chain tertiary amine oxides of general formula



- wherein  $R_1$  represents alkyl, alkenyl or monohydroxy alkyl radical of from 8 to 18 carbon atoms optionally containing up to 10 ethylene oxide moieties or a glyceryl moiety, and  $R_2$  and  $R_3$  represents alkyl of from 1 to 3 carbon atoms optionally substituted with a hydroxy group, e.g., methyl, ethyl, propyl, hydroxy ethyl, or hydroxy propyl radicals.
- Examples include dimethyldodecylamine oxide, oleyldi(2-hydroxyethyl) amine oxide, dimethyloctylamine oxide, dimethyltetradecylamine oxide, dimethyldecylamine oxide, 3,6,9-trioxaheptadecyldiethylamine oxide, di(2-hydroxyethyl)-tetradecylamine oxide, 2-dodecoxyethyl dimethylamine oxide, 3-dodecoxy-2-hydroxypropyldi(3-hydroxypropyl)-amine oxide, dimethylhexadecylamine oxide. The amine oxide surfactants are generally referred to as semi-polar although in acid to neutral media they behave akin to cationic surfactants.
- The auxiliary surfactant component of the invention is a  $C_6$ - $C_{13}$  aliphatic alcohol ethoxylate generally containing an average ( $E_{av}$ ) of from about 1.5 to about 25, preferably from about 2 to 15 and more preferably from about 6 to about 10 moles of ethylene oxide per mole of alcohol. The auxiliary surfactant preferably contains not more than about 1% by weight of unethoxylated alcohol when the ethoxylated alcohol contains an average of less than 9 moles of ethylene oxide and not more than about 2% by weight of unethoxylated alcohol when the ethoxylated alcohol contains an average of 9 or more moles of ethylene oxide per mole of alcohol. Such surfactants are preferred from the viewpoint of low temperature stability, the unethoxylated content preferably being less than about 0.7%, and more preferably less than about 0.5%. The unethoxylated material can be removed by vacuum distillation.

The starting alcohol may be a primary or secondary alcohol but is preferably a primary alcohol which may be derived from natural or synthetic sources. Thus natural fats or oils, or products of Ziegler olefin build up reactions or OXO synthesis may all be used as the source of the hydrocarbon chain, the structure of which may be linear or branched in type.

The preferred alcohol chain length range is from  $C_9$ - $C_{11}$  as it has been found that sudsing performance is optimum for ethoxylates made from such alcohols. It is also desirable for performance reasons that the hydrophilic-lipophilic balance (HLB) of the ethoxylated alcohol is in the range from 8.0 to 17.0, more preferably from 11.0 to 17.0 and most preferably from 11.0 to 15.0.

An optional but preferred ingredient of the compositions herein is from about 0.1% to about 10%, preferably from about 0.1% to about 6%, more preferably from about 1% to about 5% of a polyoxy( $C_2$ - $C_3$ )alkylene glycol having an average molecular weight in the range from about 200 to about 15,000, preferably from about 300 to about 6000. Suitable materials herein include polyoxyethyleneglycol, polyoxypropyleneglycol, block copolymers of polyoxyethyleneglycol and polyoxypropyleneglycol and mixtures thereof. A highly preferred material is polyoxyethylene glycol 600. In particular, the combined use of the auxiliary nonionic surfactant and polyoxyethyleneglycol is found herein to be particularly valuable for achieving optimum product stability, pourability and solubility in aqueous liquors. In general, the compositions of the invention contain a strong acid-derived electrolyte level of less than about 0.5%, preferably less than about 0.1% for optimum product stability.

In general, the compositions herein have a viscosity (neat) at 24°C in the range from about 1,000 to about 20,000 cps, preferably from about 2,000 to about 15,000 cps, more preferably from about 4,000 to about 12,000 cps,

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viscosity being measured in a Brookfield LVT viscometer using spindle number 4 at speed 3.

Although the addition of fatty acid alkanolamides (e.g.  $C_{10}$ - $C_{16}$  mono- and di- $C_2$ - $C_3$  alkanolamides) in higher levels has a generally deleterious effect on formulation physical characteristics, nevertheless such materials can be added for additional suds-boosting effect and thickening effect provided the amide is maintained at low concentration in product, preferably no more than about 4% by weight.

In the same way, it is a feature of the invention that the compositions require no or reduced levels of low molecular weight organic solvent (mol. wt. less than 150) for satisfactory product stability, and desirably such solvents are added in levels such that the total solvent (i.e. lower organic solvent + polyoxyalkyleneglycol) is from about 0.1% to about 20%, preferably from about 0.1% to about 10%, more preferably from about 1% to about 6% by weight of composition. If appropriate, however, a material such as ethylene glycol or propylene glycol can be added for a solvent function.

Where the composition of a liquid cleansing product will be in contact with the skin of the users, it is preferred that the cleansing product be formulated to provide a pH in use within the range of from about 4 to about 10, depending upon the particular surfactant or materials employed. Especially preferred is a pH in the range of 5 to 7. Any of a large number of known substances can be used to adjust the pH of the liquid cleansing product, e.g., sodium hydroxide, citric acid, generally at a level of up to about 0.5% of the product composition.

Perfumes may be used in formulating the liquid cleansing products, generally at a level of about 0.1% to about 5% of the product composition. Colorants may also be used in the liquid cleansing products. Opacifiers, e.g., ethylene glycol distearate, polystyrene latex, generally at a level of about 0.2% to about 2.0% of the product

composition, may be used in the liquid cleansing products to provide them with an opaque or pearlescent appearance.

Preservatives, e.g., EDTA, methyl paraben, propyl paraben, Germall 115, Kathon, generally at a level of less than 1%,

- 5 may be incorporated in the liquid cleansing products to prevent microbiological growth in the products.

The liquid cleansing products of the present invention contain at least about 42% water, preferably from about 60% to about 90% water.

- 10 The invention is illustrated in the following non-limitative examples in which all parts and percentages are by weight unless otherwise specified:

Examples I to VI

|    |  | <u>I</u> | <u>II</u> | <u>III</u> | <u>IV</u> | <u>V</u> | <u>VI</u> |
|----|--|----------|-----------|------------|-----------|----------|-----------|
| 15 | Sodium C <sub>12-13</sub> alkyl sulphate                         | 8        | 9         | 5          | 6         | 8        | -         |
|    | Sodium C <sub>12-13</sub> (EO) <sub>2</sub> alkyl sulphate       | 12       | -         | -          | -         | 8        | -         |
|    | Sodium C <sub>12-13</sub> (EO) <sub>3</sub> alkyl sulphate       | -        | 11        | 8          | 6         | -        | -         |
|    | Ammonium C <sub>12-13</sub> (EO) <sub>3</sub> alkyl sulphate     | -        | -         | -          | -         | -        | 20        |
|    | Commercial C <sub>10</sub> alcohol (EO) <sub>10</sub>            | 4        | 2         | -          | 3         | -        | 2         |
| 20 | Commercial C <sub>9-11</sub> alcohol (EO) <sub>5</sub>           | -        | -         | 4          | -         | 2        | -         |
|    | Dodecyl dimethylamine oxide                                      | -        | -         | -          | -         | -        | 3         |
|    | Jaguar A-40-F(1)   | -        | -         | -          | 0.3       | -        | -         |
|    | Jaguar HP-60   | 0.4      | 0.6       | 0.3        | -         | 0.5      | 0.55      |
|    | Propylene Glycol   | 2        | -         | -          | -         | 1        | -         |
| 25 | Polyoxyethylene/polyoxypropylene block copolymer (Pluronic L-92) | -        | -         | -          | -         | -        | 0.5       |
|    | Polyoxyethylene glycol 600                                       | 2        | 4         | 3          | 2         | 3        | -         |
|    | Coconut Monoethanolamide   | 2        | 2         | -          | -         | 1        | -         |
|    | Ethyleneglycol distearate  | 1        | 1         | 0.5        | 0.5       | 1        | 0.5       |
| 30 | Perfume  | 4        | 3         | 3          | 3         | 2        | 2         |
|    | Preservative (2)   | 0.3      | 0.4       | 0.3        | 0.4       | 0.3      | 0.25      |
|    | Citric acid  | 0.2      | 0.3       | 0.3        | 0.2       | 0.3      | 0.3       |
|    | Magnesium chloride - 6H <sub>2</sub> O                           | -        | -         | -          | 0.1       | -        | -         |
|    | Dyes   | 0.1      | 0.1       | 0.1        | 0.1       | 0.1      | 0.01      |

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- (1) Purified guar gum from Celanese Plastics & Specialities Company.
- (2) Comprises Germal 115, Methyl Paraben, Propyl Paraben and ethylenediamine tetraacetic acid.

5       The above products are made by a batch process involving addition of a hot premix to a main mix in the following manner.

Hot Premix

10       A portion of the alkyl sulphate (supplied as a 28% aqueous solution) is heated in a premix tank to about 60°C and the fatty alcohol ethoxylate and half the propylene glycol or polyoxyethylene glycol solvent are added thereto with agitation and heating to maintain a temperature of about 60°C. The preservative is then added and the premix  
15       is heated to about 65°C at which temperature coconut monoethanolamide, if present, is added. Ethyleneglycoldistearate is added after further heating to a temperature of about 65°C to 70°C.

Main Mix

20       The alkyl ether sulphate (supplied as a 28% active) and the remaining alkyl sulphate are added to a main mix tank together with the remaining water, if any. The guar material is then dispersed in the remaining propylene glycol or polyoxyethylene glycol and this is added to the main mix  
25       at ambient temperature. Finally the citric acid, and magnesium chloride, if present, are added.

30       The premix is then added with agitation at a temperature of about 70°C to the main mix, the combined mixture is rapidly cooled in a heat exchanger and dyes and perfume are added to form the finished product.

35       In the case of Example VI, the process is repeated with the amine oxide, Pluronic L-92 and a portion of the alkyl ether sulphate being incorporated in the hot premix and with the remaining alkyl ether sulphate being incorporated into the main mix.

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The resulting products have desirable foaming, thickening and skin feel properties together with excellent formulation solubility and viscosity characteristics at both normal and low storage temperatures.

CLAIMS

1. An aqueous, liquid cleansing composition comprising:
  - (a) from about 8% to about 50% of primary surfactant selected from anionic, cationic, zwitterionic, amphoteric and semi-polar surfactants and mixtures thereof,
  - (b) from about 0.1% to about 6% of auxiliary surfactant selected from ethoxylated aliphatic alcohols having an average alkyl chain length of from 6 to 13 carbon atoms,
  - (c) from about 0.1% to about 2% of a water-soluble polymeric thickening agent.
2. A composition according to Claim 1 wherein the thickening agent is a nonionic polymer selected from guar gum, hydroxypropyl guar gum, methyl cellulose, methyl hydroxypropyl cellulose, hydroxypropyl cellulose, locust bean gum, starch, starch amylose, hydroxyethylamylose and polyoxyethylene.
3. A composition according to Claim 1 or 2 wherein the thickening agent is guar gum or hydroxypropyl guar gum.
4. A composition according to any of Claims 1 to 3 wherein the thickening agent is hydroxypropyl guar gum having a degree of substitution of from about 0.3 to about 1.2, preferably about 0.6.
5. A composition according to any of Claims 1 to 4 wherein the primary surfactant is an anionic surfactant selected from alkali metal, alkaline earth metal, ammonium and alkanolammonium salts of  $C_{10}$ - $C_{16}$  alkyl sulphates,  $C_{10-16}$  alkyl ethoxy sulphates containing up to about 6 molar proportions of ethylene oxide,  $C_{10-16}$  alkyl benzene sulphonates and mixtures thereof.

6. A composition according to any of Claims 1 to 5 wherein the aliphatic alcohol has an average alkyl chain length of from about 9 to about 11 carbon atoms.
7. A composition according to any of Claims 1 to 6 wherein the aliphatic alcohol contains an average ( $E_{av}$ ) of from about 2 to about 15, preferably from about 6 to about 10 moles of ethylene oxide per mole of alcohol.
8. A composition according to Claim 7 wherein the auxiliary surfactant contains less than about 1% of unethoxylated aliphatic alcohol when  $E_{av}$  is less than 9 and less than about 2% of unethoxylated alcohol when  $E_{av}$  is equal to or greater than 9.
9. A composition according to any of Claims 1 to 8 comprising from about 10% to about 30% of primary surfactant, from about 0.5% to about 4% of auxiliary surfactant, and from about 0.3% to about 0.7% of guar gum or hydroxypropyl guar gum.
10. A composition according to any of Claims 1 to 9 additionally comprising from about 0.1% to about 10%, preferably from about 0.1% to about 6% of polyoxy( $C_2-C_3$ )alkyleneglycol having an average molecular weight in the range from about 200 to about 15,000.
11. A composition according to Claim 10 wherein the polyoxy( $C_2-C_3$ )alkylene glycol is polyoxyethylene glycol having a molecular weight of about 600.
12. A composition according to any of Claims 1 to 11 additionally containing from about 0.5% to about 4% of  $C_{10}-C_{16}$  mono- or di- $C_2-C_3$  alkanolamide.

13. A composition according to any of Claims 1 to 12 comprising organic solvent in a level of about 0.1% to about 20%, preferably from about 0.1% to 10% by weight of composition.

14. A composition according to any of Claims 1 to 9 additionally comprising from 0.1% to 20%, preferably from 0.1% to 10% by weight of organic solvent selected from ethylene glycol, propylene glycol, polyoxyethylene glycol, polyoxypropylene glycol, block copolymers of polyoxyethylene glycol and polyoxypropylene glycol and mixtures thereof.

15. A composition according to claim 14 additionally containing from about 0.5% to about 4% of  $C_{10}$ - $C_{16}$  mono- or di- $C_2$ - $C_3$  alkanolamide.

(12)

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(54) Liquid cleansing composition.

(57) Aqueous liquid cleansing compositions comprise about 8% to 50% of primary surfactant selected from anionic, cationic, zwitterionic, amphoteric and semi-polar surfactants, from about 0.1% to 6% of C<sub>8</sub>-C<sub>13</sub> alcohol ethoxylate and from about 0.1% to 2% of a water-soluble nonionic polymeric thickening agent, preferably guar gum or derivative thereof. The compositions have desirable foaming, product stability and skin feel characteristics.

**EP 0 167 382 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

0167382

Application number

| DOCUMENTS CONSIDERED TO BE RELEVANT   |   |  | EP 85304686.0   |
|---|---|--|---|
| Category  | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim                              | CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)            |
| E,X   | US - A - 4 564 463 (SECEMSKI et al.)<br>* Claims 1,5 *<br>--                  | 1,2,6  | C 11 D 1/83<br>C 11 D 1/72<br>C 11 D 3/37<br>C 11 D 3/382 |
| A   | GB - A - 2 126 243 (COLGATE-PALMOLIVE)<br>* Example 6 *<br>--                 | 1,2,5,7  |   |
| A   | DE - C2 - 2 840 463 (HENKEL)<br>* Example 4 *<br>--                           | 1,2,5-7,13,15                                  |   |
| A   | DE - A1 - 3 247 992 (COLGATE-PALMOLIVE)<br>* Example 1 *<br>--                | 1,2,3,9  |   |
| A   | EP - A1 - 0 079 641 (UNILEVER NV)<br>* Example III *<br>----                  | 1,6,7,13                                       |   |
| The present search report has been drawn up for all claims  |   |  | TECHNICAL FIELDS SEARCHED (Int. Cl. 4)<br>C 11 D          |
| Place of search<br>VIENNA   |   | Date of completion of the search<br>11-05-1989 | Examiner<br>KÖRBER  |
| <b>CATEGORY OF CITED DOCUMENTS</b><br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |   |  |   |